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Further Evidence of the Effect of Valence and Chemical Combination on the K Limit of Sulphur

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RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M_2	6.6500	6.475	—0.175	Zumstein
Os (76)	M_2	6.08	5.975	—0.105	Rogers
Ir (77)	M_2	5.86	5.754	—0.106	Rogers
Pt (78)	M_2	5.6413	5.539	—0.1023	Rogers
Bi (83)	M_2	4.5886	4.569	—0.0196	Coster
Th (90)	M_2	3.5519	3.552	+0.0001	Stenstrom
Ur (92)	M_2	3.3258	3.3260	+0.0002	Stenstrom

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M_3	5.4664	5.418	—0.0484	Zumstein
Os (76)	M_3	5.06	5.027	—0.033	Rogers
Ir (77)	M_3	4.88	4.851	—0.029	Rogers
Pt (78)	M_3	4.6947	4.674	—0.0207	Rogers
Bi (83)	M_3	3.8942	3.894	—0.0002	Coster
Th (90)	M_3	3.0580	3.058	0.0000	Stenstrom
Ur (92)	M_3	2.8730	2.873	0.0000	Stenstrom

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M_4	4.8419	4.800	—0.0419	Zumstein
Os (76)	M_4	4.430	4.400	—0.030	Rogers
Ir (77)	M_4	4.260	....	.....	Rogers
Pt (78)	M_4	4.079	....	.....	Rogers
Bi (83)	M_4	3.3306	....	.....	Coster
Th (90)	M_4	2.5690	2.571	+0.002	Coster
Ur (92)	M_4	2.3923	2.385	—0.0073	Coster

RESULTS AND COMPARISONS

ELEMENT	LIMIT	λ (PREDICTED)	λ (OBSERVED)	DIFFERENCE	AUTHOR
W (74)	M_5	4.4051	4.365	—0.0401	Zumstein
Os (76)	M_5	4.07	4.0375	—0.0325	Rogers
Ir (77)	M_5	3.92	....	.....	Rogers
Pt (78)	M_5	3.756	3.738	—0.018	Rogers
Bi (83)	M_5	3.0919	....	.....	Coster
Th (90)	M_5	2.3886	2.388	—0.0006	Coster
Ur (92)	M_5	2.2313	2.228	—0.0033	Coster

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FURTHER EVIDENCE OF THE EFFECT OF VALENCE AND CHEMICAL COMBINATION ON THE K LIMIT OF SULPHUR

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(ABSTRACT)

A number of spectrograms have been obtained showing the K absorption limit of sulphur. The absorption was due to sulphur

in the gypsum ($CaSO_4 . 2H_2O$) crystal used in the analysis of the M series absorption spectra of the platinum group.

The results contained in the table below support the evidence of Lindh [1] that the limit of sulphur with higher valence is of shorter wave length than that of crystalline sulphur for which Fricke [2] reports 5.0123 Angstroms. However, the values here obtained seem to show a slightly higher value than that presented by Lindh.

RESULTS SULPHUR K ABSORPTION

Plate	Reference Lines	(λ)	Author
105	Pbα — Pbβ	4.9889	R
105	Sα — Pbβ	4.9899	R
115	Sα — Pbβ	4.9919	R
115	Sα — Pbβ	4.9915	R
116	Sα — Pbβ	4.9917	R
116	Pbα — Pbβ	4.9913	R
116	Sα — Pbβ	4.9914	R
118	Pbα — Pbβ	4.9919	R
118	Sα — Biβ	4.9906	R
118	Sα — Biα	4.9903	R
120	Pbα — Biβ	4.9891	R
120	Biα — Biβ	4.9902	R
	Average	4.9907	Rogers
	$CaSO_4$ ($+2H_2O$)	4.9877	Lindh

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A NEW TYPE OF PHOTOELECTRIC COLORIMETER

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(ABSTRACT)

A photoelectric colorimeter has been constructed which is capable of detecting small changes in the color of meat. With this apparatus it was possible to measure the variation in th ecolor of meat as a function of the time of exposure to the air. The effects of temperature upon the color variation were also measured; and some data has been obtained showing the relation between the color and the grade of the meat.

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1 Lindh, Diss., Lund.
2 Fricke, Phys. Rev., Vol. 16, 1920, p. 202.